

Decentralized ebike-energy-to-grid platform DEEP

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May 14, 2018

Summary

Green power generation, storage and distribution will be composed of millions of small, decentralised power sources of producers and consumers, the prosumers. In such systems, it will be important to connect efficient batteries to secure and instantaneous, autonomous green energy transactions across prosumers as energy market conditions change. We aim to connect prosumers to a decentralized ebike energy-to-grid platform (DEEP) using blockchain technology. We introduce an integrated smart-testnet mini-grid connecting electric hubs to open-source energy blockchain platforms containing producers and consumers. We outline the bottlenecks, the improvements needed, and a roadmap for the future of coupling ebike networks to decentralized open-source computer and power networks.

—idea—

Multi-platform app to connect ebike dual battery to blockchain energy platforms
(i.e., Hyperledger fabric, TobaLaba, Grid+, Powr)

—interdisciplinarity—

Network science: integration among different kind of networks and vision
computer science: blockchain-app code and VESC open-software
electric engineer: dual battery, inverters and micro-grids

PROS

0. Reduce co2 all energy cycle
1. Green energy — sustainable development
2. Local smart grid development
3. Bottom-up: individual-community prosumers
4. Urban bike network development
5. Research about efficiency and smart meters by tracking and sharing energy production-consumption data
6. Real time price in the green energy market by connecting many-to-many battery types-decentralized-green energy platforms
7. Deregulation energy production many countries
8. Frame architecture-design oriented to produce energy

CONS

1. Low efficiency dual battery
2. Low energy recovery
3. Energy production mostly for large kms/day
4. Absence of inverter-energy-to-grid networks in urban landscapes

Keywords: Green energy. Interconnected networks. Plug-in electric bikes. ebike networks. Smart mini-grid. Computer networks. Power network. Blockchain.